ENERGY STAR LIGHTING

Initial Qualification
and On-Going Quality Assurance

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DRAFT - CONCEPT - IDEAS

ENERGY STAR Lighting Overview

ENERGY STAR Qualified CFLs

CFLs have increased market potential by adding new sizes, shapes, wattages, applications, CCTs and light outputs

Resulting Market Dynamics – Cause & Effect

Cause: With the variety of products and manufacturers – comes the pressure for lower price points

Effect: CFLs could threaten their own potential by overly compromising quality to hit consumer, retailer and utility price points

ENERGY STAR Lighting Overview

ENERGY STAR Qualified CFLs

Recent PEARL test results indicate inconsistencies between products tested for initial ENERGY STAR qualification and retail stocked products

ENERGY STAR Program Dynamics – Cause & Effect

Cause: Multitude of possibilities – manufacturing process quality issues, change in components, use of a prepared “best one” initial test sample

Effect: Inconsistent or poor performance results threaten the validity of the ENERGY STAR program, consumer satisfaction, and market transformation successes

ENERGY STAR Lighting Overview

ENERGY STAR Lighting Program Need:

- DOE and EPA need to recognize the role and contribution of the PEARL testing program while assessing current and future quality assurance needs

- To assure consumer confidence and ENERGY STAR credibility, a more comprehensive testing and quality assurance program needs to be established

Required Functions of a Quality Assurance Program

Functions:

- Self-sustaining financial structure
- Quality assurance beyond limited Pearl testing
- Third party administration
- Process validated through accreditation and linkage to ISO/IEC/ANSI/NVLAP guidance
- Product reliability assured through a continual quality testing and reporting program

Administration of the Quality Assurance Program

Administration:

- Establish and administer a sampling plan, testing process, and qualification compliance review for retail stock and production line samples
- Establish and administer a methodology for disqualifying products that have failed the testing procedure
- Establish and administer a process to terminate product disqualification repeat offenders from the program
- Establish and administer an appeal process for manufacturers

Possible Pathways for Quality Assurance Program

Possible Pathways:

- ENERGY STAR Initial Qualification & Existing PEARL Program
- ENERGY STAR Initial Qualification & New Third Party Testing Program
- Continuous Quality Control Program
  - Accredited Lab Qualification Testing (NVLAP) and a Recognized Quality Control Program (ISO, Six Sigma, etc.)
  - Full Fledged Product Certification Program (i.e., FAA Airport Lighting)

Existing Processes & Models

Existing Models:

- Federal & International Standards
- Trade Association Standards
- Voluntary Rating Organizations
- Third-Party Testing & Verification using government guidelines
- Third-Party Testing & Verification using privately generated guidelines
- Product Certification Programs

Three Processes To Be Considered

Processes:

I. ENERGY STAR Initial Qualification Process
- Manufacturers Testing Data from NVLAP Accredited Labs or
- Single Authorized Third Party Testing Verification Lab

II. On-Going Quality Assurance Process
- Recognized Programs ISO 9002, Six Sigma, TQM or
- ENERGY STAR Plant Inspections and Production Line Sampling

III. Market Sampling & Testing Program
- PEARL Board Product Selection Process or
- Third Party Detailed Selection & Sampling Plan

Initial Qualification Process

I Initial Qualification Process

- Manufacturer's Test Data from NVLAP Accredited Labs
  - Any Independent Accredited Lab
  - Manufacturer's In-house Accredited Lab
- Single, Only Authorized Third Party Testing Lab
  - i.e., LRC, Intertek, Dave's Drive Through Testing

On-Going Quality Assurance

II On-Going Quality Assurance Process

- Recognized Manufacturing Processes Continual Quality Assurance Programs
  - ISO 9002, Six Sigma, TQM
- ENERGY STAR Program Third Party Plant Inspections and Production Line Sampling
  - Requires International Capabilities (& Approvals?)

Market Sampling & Testing Program

III Market Sampling & Testing Program

- Voluntary Rating Organizations:
  - a base organization exists in PEARL but needs and demands on resources are rapidly growing

- Third-Party Testing & Verification or Certification Using Government Guidelines:
  - an example model exists with the FAA program for the airport lighting industry

Stakeholder Benefits

- Energy Efficiency Program Administrators
  - Assurance of increased, systematic, permanent product quality
- Manufacturers
  - A “level playing field” with consistent administration, clear rules and predictable outcomes
- Government
  - Energy savings and environmental improvements through government oversight of product performance specifications and testing protocols

Next Steps: Asking the Tough Questions

Question 1:

What are the most viable and best options for an effective and sustainable system?

Next Steps: Asking the Tough Questions

Question 1:

What are the most viable and best options for an effective and sustainable system?

Answer 1:

Next Steps: Asking the Tough Questions

Question 2:

How is the cost of the new and improved process to be shared?

Answer 2:

Next Steps: Asking the Tough Questions

Question 3:

Will future changes in criteria such as CCT, efficacy and candelabra base units impact the new process?

Answer 3:

The new process should be developed to accommodate foreseen changes.

Next Steps: Asking the Tough Questions

Question 4:

What is the timetable for instituting the new process?

a) What happens between now and the establishment of the new process? Do we have Cycle 7 of PEARL?

Answer 4:

The new program starting date is unknown and dependent on the complexities of the program however…the date to start is now!

ENERGY STAR Lighting Overview

ENERGY STAR Qualified Light Fixtures:

- Hard-wired fixtures are a separate (from CFL lamps) and growing market
- Hard-wired fixtures are complex because of possible combinations of lamps, ballasts, reflectors, lenses, etc.
- The PEARL testing program does not currently offer an effective solution to disqualify products

Third-Party, Government Policy Model Example

FAA Lamp and Airport Lighting Equipment Certification Process

This is being provided as an example.

Third-Party, Government Policy Model Example

FAA Model

- Prior to 1989, FAA was experiencing airport lighting quality problems, and running its own testing program

- Some manufacturers complained that testing was not catching “bad actors”

- FAA agreed to establish a third party program

FAA Certification Process

- Manufacturer negotiates fees directly with qualified laboratories
- Manufacturer submits (or laboratory acquires) product
- Certifier sends “certificate of conformance” (or nonconformance) to FAA
- FAA updates website
- Certificate expires after a pre-determined period, requiring re-testing of product

FAA Manufacturing Facilities Tests

- Certifier visits manufacturers' facilities to verify model numbers and product designs
- Substantial changes in design triggers re-testing requirement
- This testing is optional, designed and implemented if determined necessary by FAA

FAA Challenge Process

- Manufacturers who suspect competitors' products can issue a "challenge"
- Challenge triggers testing by third party certifier
- Loser pays for the test
- Challenge and fees are administered by third party certifier, not FAA

Third-Party, Government Policy Model Example

FAA Program Design

- FAA met with ANSI and NIST to set criteria for third party testing labs
- ANSI audits the testing labs to ensure their administrative and technical qualifications
- ANSI provides FAA with a list of qualified testing facilities